



Amendments to the Claims:

Please amend the claims as follows (complete listing of claims with markups according to Revised Format):

1. (currently amended) An optical detection method for a protein microarray, comprising steps of:
 - providing a capture molecule;
 - recognizing a biomolecule on said protein microarray via said capture molecule;
 - providing a primer to connect with said capture molecule;
 - amplifying a signal of said primer on said capture molecule via a rolling circle amplification system; and
 - detecting said amplified signal via a ~~nanoparticle~~ nanogold probe and a quantum dot.
2. (original) The method according to claim 1 wherein said capture molecule is one selected from a group consisting of an antibody, a biomarker, a protein receptor, a carbohydrate and a peptide.
3. (original) The method according to claim 1 wherein said biomolecule is one selected from a group consisting of an antigen, a ligand, a protein, a carbohydrate and a peptide.
4. (original) The method according to claim 1 wherein said primer is a single-strand oligonucleotide of 20-80 bp.
5. (original) The method according to claim 1 wherein the 5' end of said primer is modified with an amino group to connect with said capture molecule.
6. (original) The method according to claim 1 wherein said rolling circle amplification system comprises a DNA polymerase, a circular template, nucleotides (dNTP) and a buffer system.
7. (original) The method according to claim 6 wherein said circular template has a sequence complementary to said primer to hybridize with said primer.

8. (original) The method according to claim 7 wherein said rolling circle amplification system generates a single-strand DNA molecule connected with said primer and having tandemly repeats of a sequence complementary to said circular template via said DNA polymerase.
9. (original) The method according to claim 6 wherein said circular template has a nucleotide sequence of 25-100 bp.
10. (currently amended) The method according to claim 1 wherein said ~~nanoparticle~~ nanogold probe is a ~~nanoparticle~~ modified with a single-strand oligonucleotide.
11. (canceled).
12. (original) The method according to claim 10 wherein a length of said single-strand oligonucleotide is 10-60 bp.
13. (currently amended) The method according to claim 10 wherein the 5' end of said single-strand oligonucleotide is modified with an -SH group to react strongly with the surface of said ~~nanoparticle~~ nanogold.
14. (currently amended) The method according to claim 10 wherein said ~~nanoparticle~~ nanogold is a sphere or a polyhedron.

Claims 15-22 (canceled).